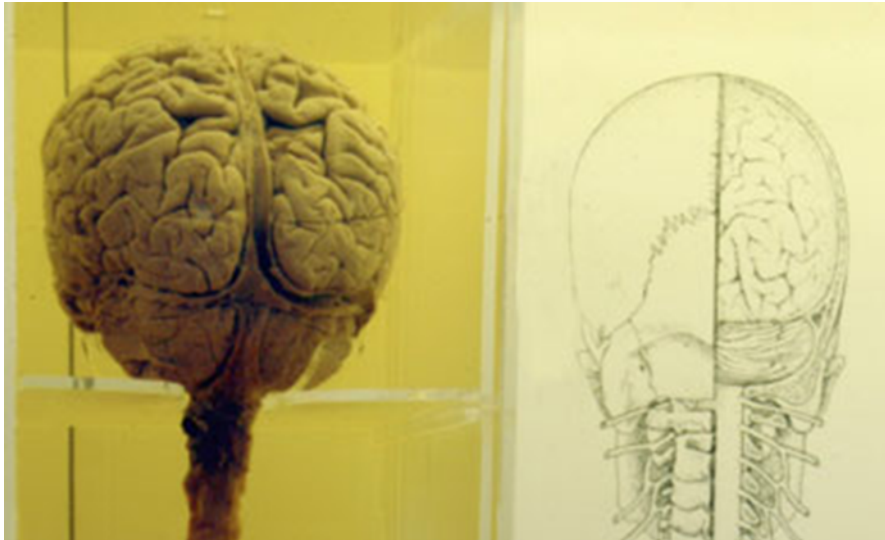
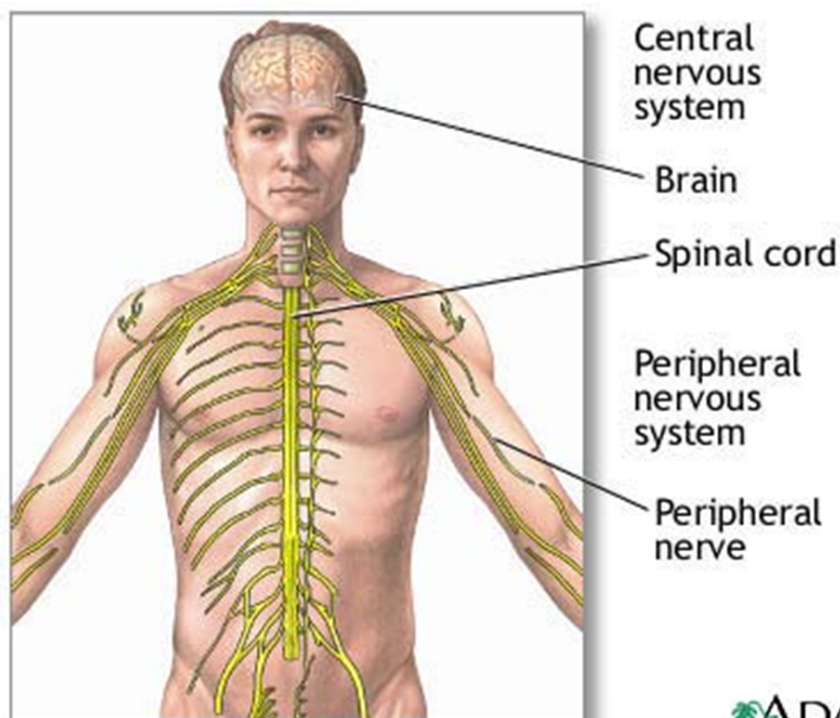


# The Central Nervous System



- consists of the brain and the spinal chord
- acts as the coordinating center for incoming and outgoing information

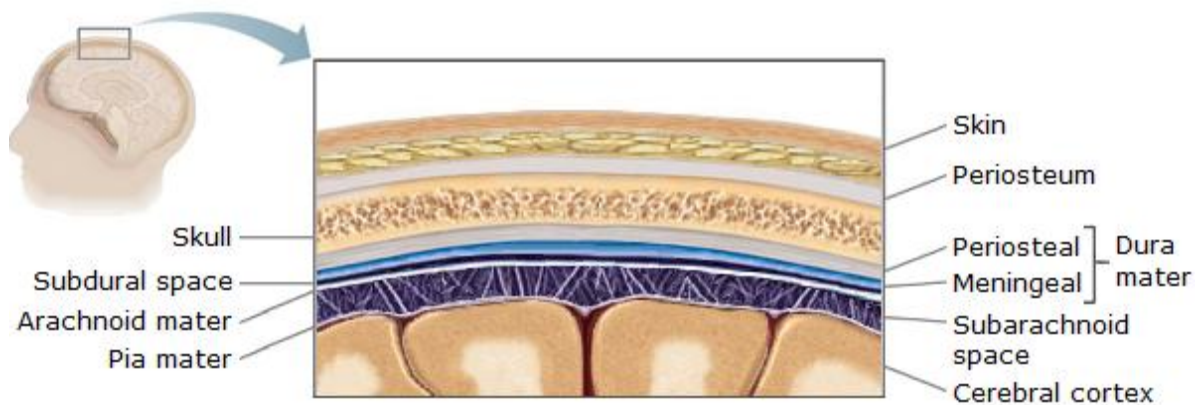


## The Brain

<https://www.youtube.com/watch?v=kMKc8nfPATI>

- the control center for the nervous system of the body
- is enclosed in the **cranium** and is surrounded by 3 membranes collectively called the **meninges**.

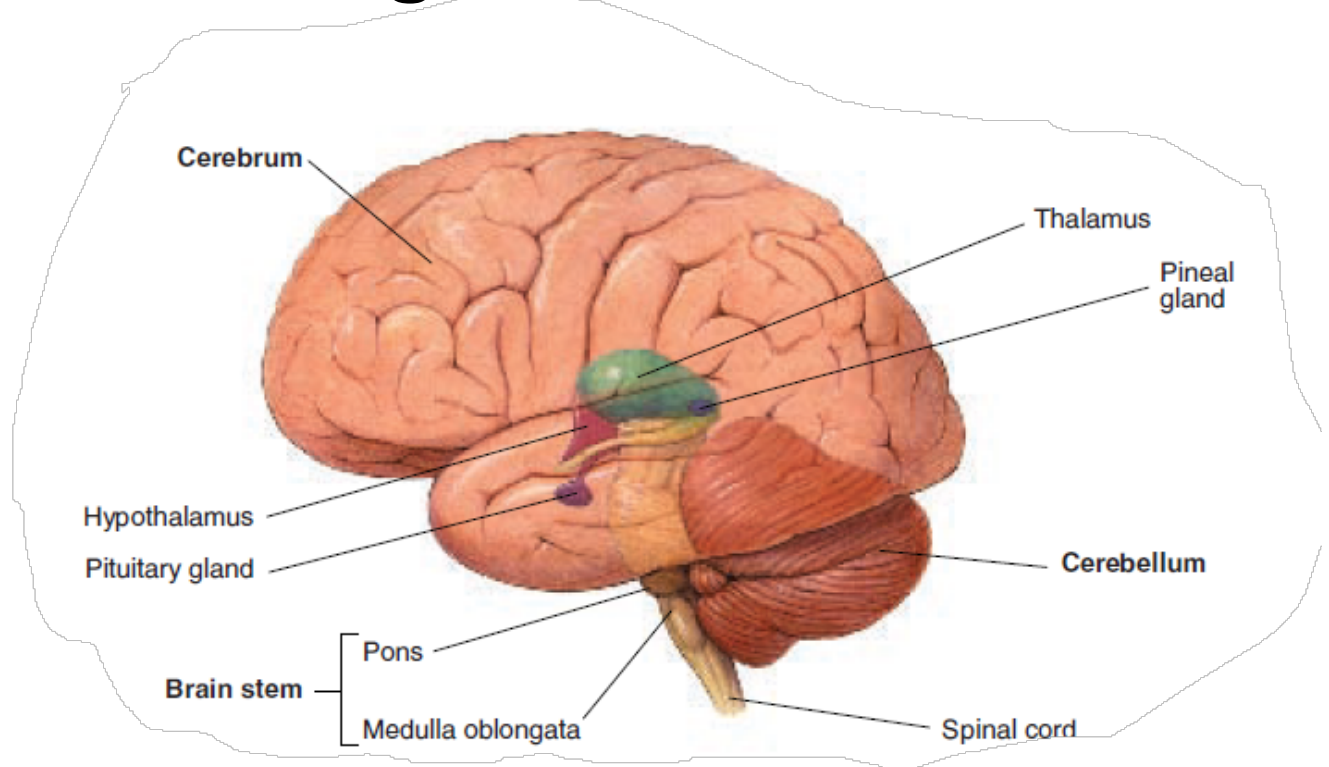
### Cross-section of Skull and Meninges



**Cerebrospinal fluid** flows between the two inner layers of the meninges and through the central canal of the spinal cord.

This fluid acts as a transport for nutrients and wastes to and from the brain. It also acts as a shock absorber.

# The Regions of the Brain



Page 901 - label the diagram of the brain and explain the main job of each part.



- Two hemispheres
- Corpus Collosum - a group of nerves that connects the two hemispheres

- left side of brain controls right side of body

- left side is associated with mathematical ability

- right side controls left side of body and is associated with creativity and artistic ability

## Cerebrum

- cerebrum is made up of two big hemispheres that are involved with the coordination of sensory information and motor actions.
- speech, reasoning, memory and personality come from the cerebrum.
- has 4 lobes



Assignment - 10 marks. Draw the outline of the cerebrum on a sheet of blank paper and divide it into its 4 lobes. In each section sketch diagrams that indicate what bodily functions are controlled by each lobe. Be neat and colourful.

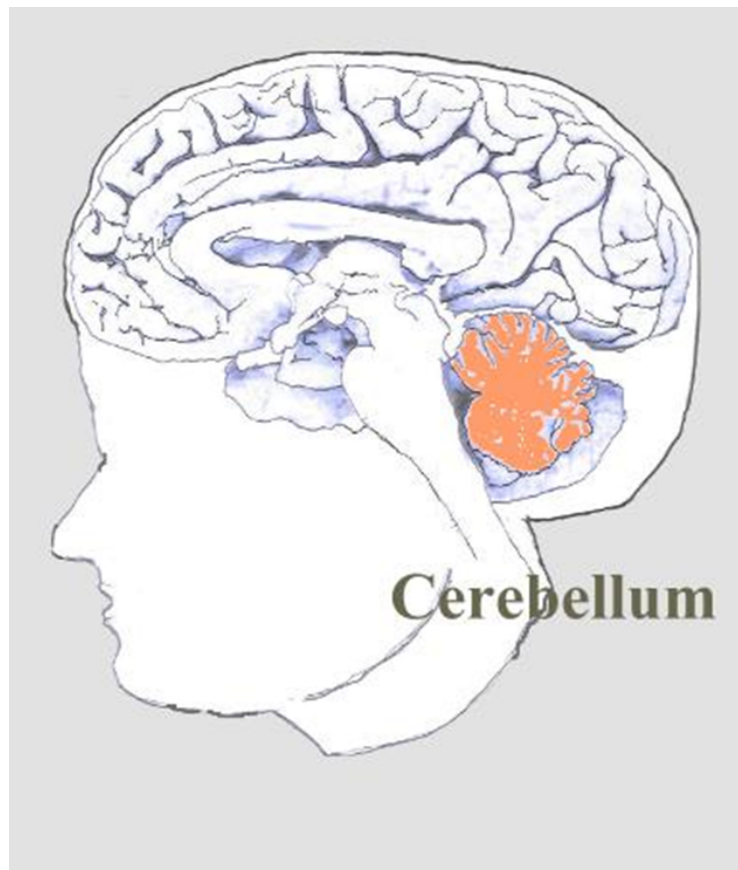
1. **Frontal Lobe** – controls movement of voluntary muscles (speech & walking) and is linked with intellectual activities and personality.

2. **Temporal Lobe** – associated with vision and hearing, as well as memory and interpretation of sensory information.

3. **Parietal Lobe** – associated with touch and temperature awareness, as well as emotions and interpreting speech.

4. **Occipital Lobe** – associated with vision and interpreting visual information.

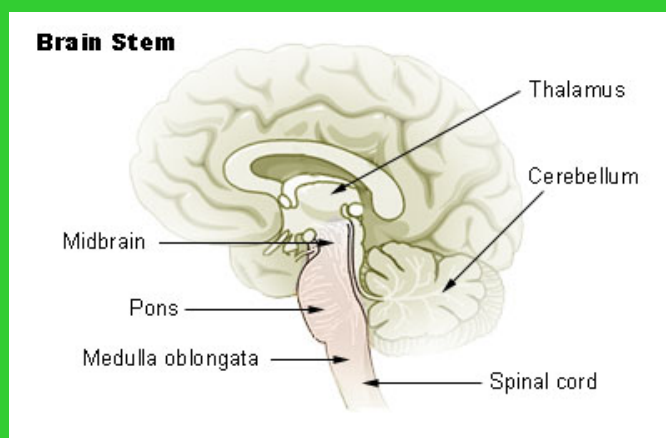
# The Cerebellum



The **cerebellum** is found directly under the cerebral hemispheres and co-ordinates the movements of limbs, balance and muscle tone.



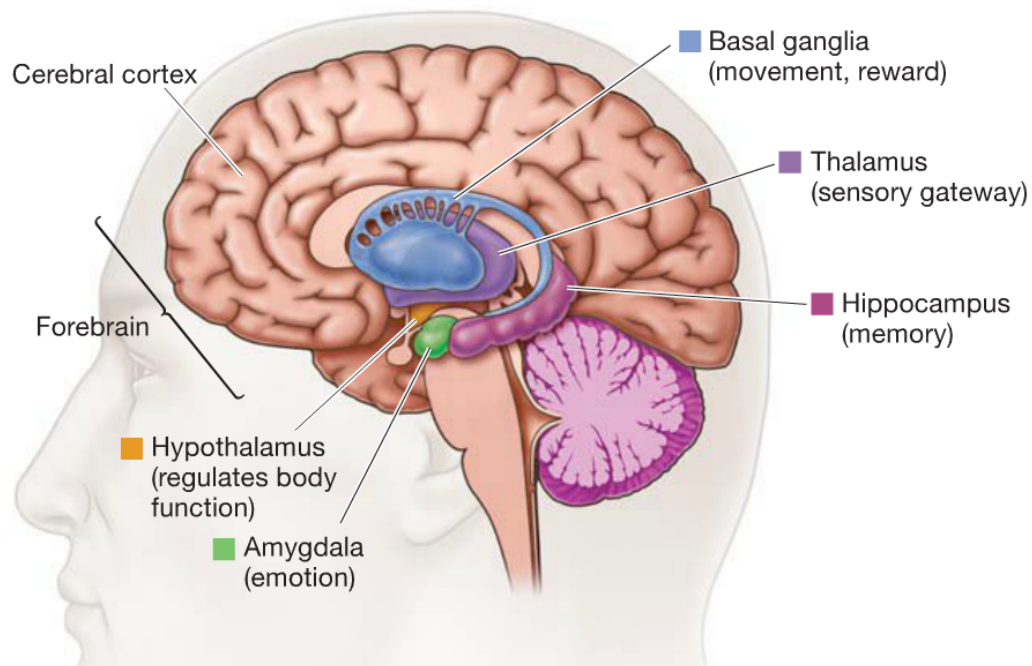
Brain Stem - made up of the mid-brain, pons and the medulla oblongata



The **pons** relays information between the regions of the cerebellum and between the cerebellum and the medulla oblongata.

- Medulla oblongata – controls involuntary muscles (breathing, heartrate, temperature organs)

Thalamus- relays information to various parts of the brain



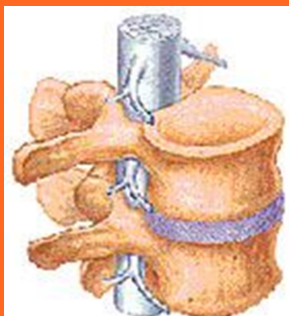
Basal ganglia - a group of nerves that works with cerebellum to help co-ordinate voluntary movement



## Lesson 2 The Central Nervous System.notebook

### The Spinal Cord

- Vertebrae form the bony spine
- Discs cushion the vertebrae
- Spinal cord runs up through the backbone

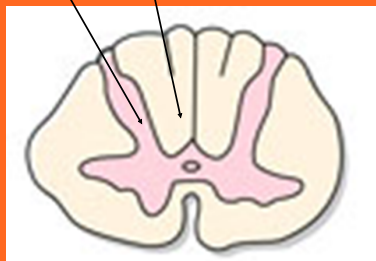


**spinal cord** carries sensory nerve messages from sensory receptors to the brain and relays motor nerve messages from the brain to muscles and glands.

The spinal cord is made up of two types of nerve tissue; white matter and gray matter.

1. **White matter** - surrounds the gray matter and is made up of unmyelinated nerve fibers of the interneurons.

2. **Gray matter** - found inside the white matter and is made up of unmyelinated axons and cell bodies of motor neurons.



- made up of 5 main regions : thoracic, cervical, lumbar, sacral, coccyx

